

REMARKS

The present amendment is being filed concurrently with a Request for Continued Examination under 37 CFR 1.114 of the subject patent application.

In the light of the amendments to the claims it is believed that the present RCE application is in condition for allowance which action is respectfully solicited.

Applicants note that the Terminal Disclaimer over copending Application No. 12/169,238 previously submitted by Applicants' has been accepted by the Examiner. As such, no double patenting rejection is outstanding.

Applicants have amended the pending claims and have added new claims. Support for the amendments and the new claims can be found in the specification at paragraphs [0046] and [0049]-[0053].

Formal Drawings are also being filed concurrently herewith. In the Formal Drawings it has been clarified that all portions, or the entire, pedestal shield resides below the plane of the top surface of the pedestal. The Examiner has acknowledged in the USPTO communication mailed May 17, 2010 that the specification has support to submit these new formal drawings showing "all portions of the pedestal shield" as being "below the plane of the top surface of the pedestal."

Applicants continue to submit that the cited prior art of record do not disclose, contemplate or suggest, alone or in any proper combination thereof, the limitations of the presently pending claims. Again, Figs. 1 and 3 of Tepman et al., US Patent No. 5,589,224 (hereinafter referred to as "Tepman Ref 1") show that its

annular shield ring 20 fits peripherally over the support 16 and includes a downward extending centering flange 22 that fits into opening 17 and an outer flange 23 parallel to flange 22, whereby the shield ring 20 is seated over and contacts the mating flange 15 of the shield member 10. (Figs. 1 and 3; Col. 3, ll. 14-31.) This annular shield ring 20 has a raised, inwardly-extending roof 25 that overlaps and resides over a top surface plane of the support 16 to protect the periphery of the substrate from inwardly traveling species (e.g., along direction 56). (Fig. 1; Col. 3, ll. 8-12 and 19-21.)

Referring to Fig. 5 of Tepman Ref 1, this shield arrangement includes a pedestal 80 alone without a removable pedestal shield, whereby the pedestal 80 itself has "a circumferential groove 82 formed in the substrate receiving portion thereof, into which the flange 62 is selectively received," whereby the groove is preferably U-shaped. (Col. 5, ll. 50-66.) Again, this is not the same as or equivalent to applicant's claimed pedestal shield having all portions thereof residing below a top surface plane of the pedestal. Tepman even discloses that the shielding components of the chamber are the pedestal 80 and shield 60 that is attached to the chamber 2. (Col. 5, ll. 50-53 and col. 6, ll. 64-67.) Since the extended portion of the pedestal 80 of Fig. 5 of Tepman Ref 1 is part of the pedestal itself, this extended portion is not and cannot be a separate distinct pedestal shield that is attachable, preferably removably attachable, to a pedestal as is currently claimed.

Applicant continues to submit that Tepman Ref 1 also does not disclose, contemplate or suggest the claimed curvatures of the pedestal or sidewall shields.

In particular, Tepman discloses with reference to Fig. 1 a cylindrical shield 10 mounted to a support ring 4. In the raised position, this shield 10 does extend inwardly and downwardly with a lower end thereof 13 extending inward and disposed below the support 16 upper surface; however, unlike that of the present invention the lower end of the shield 10 is adjacent the annular shield ring 20 lower portion - -not the pedestal shield upper portion as is claimed. Moreover, the flange 15 at the lower end of the shield 10 extends upwardly to contact a lower or bottom surface of the shield ring 20. (Figs. 1 and 3; Col. 3, ll. 14-31.) That is, pedestal shield 10 and sidewall shield 60 do not cooperate in the raised position to avoid contact with each other and prevent line-of-sight deposition transmission from the sputter target to the side and lower walls of the deposition chamber, as is claimed. As for the configuration of Fig. 5 of Tepman, again, there is no attachable shield such that any sidewall shield 60 would be able to prevent line-of-sight deposition transmission therewith.

The Examiner has recognized that Tepman Ref 1 fails to disclose or suggest a pedestal shield that is removably attachable to a pedestal. To overcome this deficiency the Examiner cites Chung et al., US Patent No. 6,171,453 (hereinafter referred to as "Chung") for the limitation of a pedestal shield 84 that is attachable to a pedestal 82, therein citing Col. 6, lines 59-64.

Chung discloses a shielding system in which a pedestal shielding ring 84 cooperates with the lower chamber shield 48 (Figs. 6A and 6B) when the pedestal is in the lowered or release position. (See, Figs. 6A and 6B.) Also, in this lowered or

release position the lower end of the sidewall shield 48 is adjacent the lower or underside of the shielding ring 84 - not the upper side of a pedestal shield as is claimed. The pedestal shielding ring 84 has a top plane surface that resides above the top plane surface of the pedestal 82. As such, neither Tepman Ref 1 nor Chung alone or in combination disclose or suggest a pedestal shield that entirely resides below a top surface plane of the pedestal and is removably attachable thereto, as is claimed.

Further, Chung describes that in it's raised or process position the pedestal shielding ring 84 does not cooperate with the lower chamber shield 48. It is again submitted that Tepman Ref 1 does not disclose, contemplate or suggest the claimed structure features of applicant's sidewall shield when the pedestal is in the raised versus lowered positions, and Chung does not overcome these deficiencies.

In particular, it is submitted that Chung does not disclose, contemplate or suggest a sidewall shield whereby when the pedestal is raised the sidewall shield (i.e., lower chamber shield 48) has a lower end thereof disposed below the pedestal upper surface plane and adjacent the pedestal shield (i.e., the pedestal shielding ring 84) upper portion, whereby the pedestal shield and sidewall shield cooperate when the pedestal is in the raised position to avoid contact with each other and prevent line-of-sight deposition transmission from the sputter target to the side and lower walls of the deposition chamber. On the contrary, in the raised position shown in Fig. 6B of Chung the lower chamber shield 48 resides below the lower planes of both the pedestal and pedestal shielding ring 84, and there is no

cooperation between the pedestal shield and sidewall shield in the raised position. Furthermore, in the lowered position of Chung the sidewall shield lower end is below the pedestal, which is contrary to the present claims.

Applicant submits that neither Tepman Ref 1 nor Chung, alone or in combination, disclose, contemplate or suggest a pedestal shield in its entirety (and not just a portion thereof since this is not consistent with the specification or drawings) resides below a top surface plane of the pedestal and is removably attachable thereto, alone or in combination with the claimed curvatures of the pedestal or sidewall shields in both the lowered and raised positions discussed in detail above.

The Examiner has further cited Tepman et al., US Patent No. 5,803,977 (hereinafter referred to as "Tepman Ref 2") in combination with Tepman Ref 1 and Chung.

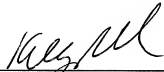
The Examiner states that Chung further teaches that the pedestal shield 84 is removably attached to an end portion of the pedestal 82 via a mechanical connection 92 (col. 6, lines 51-64). The Examiner recognizes that Chung does not suggest that the end portion of the pedestal is a separate isolated ring and cites Tepman Ref 2 for this deficiency. Applicant submits that Tepman Ref 2 does not overcome the deficiencies of Tepman Ref 1 and/or Chung, alone or in combination, since Tepman Ref 2 also discloses an annular shield ring 20 that resides above the top plane surface of the pedestal 504 and has a wall-like cylindrical shield member

10 that directly contacts the underside of the annular shield ring 20. Applicant submits that none of the cited references disclose, contemplate or suggest that all of a pedestal shield (i.e., the entire pedestal shield) resides below a top surface plane of the pedestal and is removably attachable thereto, along with the claimed curvatures of the pedestal or sidewall shields in both the lowered and raised positions discussed in detail above and as currently claimed.

In view of the foregoing, it is submitted that Tepman Ref 1, Tepman Ref 2 nor Chung, alone or in combination, render obvious the presently pending claims.

In the light of the amendments to the claims it is believed that the present RCE application is in condition for allowance which action is respectfully solicited.

Respectfully submitted,



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